

SOURCE: USGS 7.5-MINUTE QUADRANGLE OF PORTLAND, OR, DATED 2011 AS PROVIDED BY USGS.GOV.

DRAWING SET:

- C-1 SITE PLAN
- C-2 BASE PLAN
- C-3 EROSION CONTROL, GRADING, AND FILL PLAN
- C-4 SAMPLING PLAN
- C-5 DETAILS

LEGEND:

- x — x — x — FENCELINE
- WR-163 INLET AND OUTFALL PIPE AND NUMBER
- STORM SEWER LINE AND FLOW DIRECTION
- ROOF DRAIN
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- EXCAVATION STATION DESIGNATION



OREGON



EXPIRES: DEC. 31, 2015



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EXTERNAL
REFERENCE FILES

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE

DRAWING SET AND LEGEND

REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

FILENAME:
SITE DRAWINGS
APEX PROJECT NUMBER
1115-16.003
SCALE
NOT TO SCALE
DRAWING NUMBER
COVER
SHEET NUMBER
1 OF 6

SUBMITTED: Herb Clough
PRINCIPAL ENGINEER

DATE: 11/7/13



REGISTERED PROFESSIONAL
ENGINEER
15,147 PE
OREGON
OCT. 2, 1980
HERBERT F. CLOUGH
EXPIRES: DEC. 31, 2015

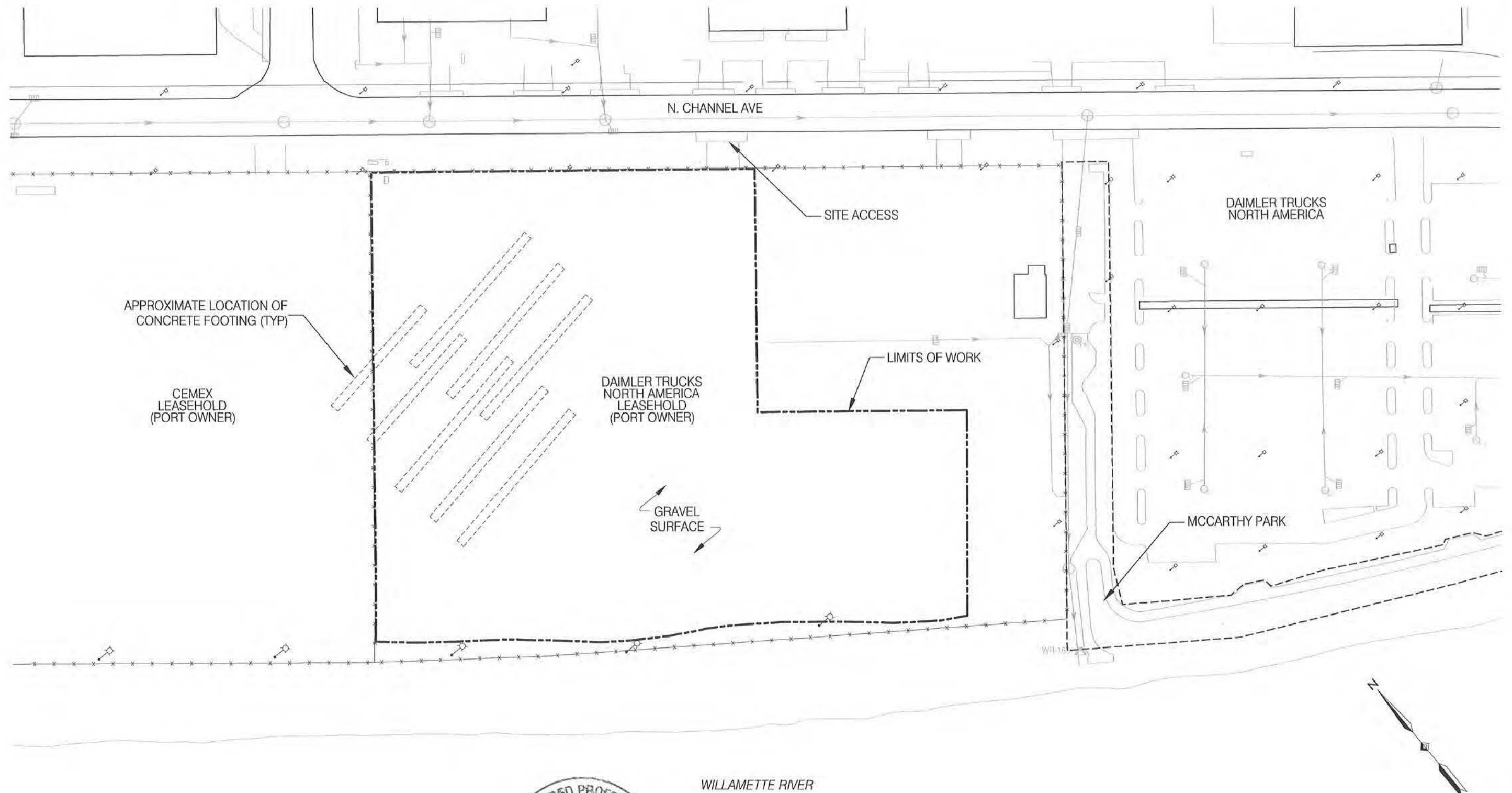
REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE APP

APEX Apex Companies, LLC
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DATE: 11/7/13

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CHECKED: _____
APPROVED: HFC

SITE PLAN
REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

FILENAME:
SITE DRAWINGS
APEX PROJECT NUMBER
1115-16.003
SCALE
1" = 100'
DRAWING NUMBER
C-1
SHEET NUMBER
2 OF 6



ZONE		REV.		REVISIONS		BY		DATE		APP.	
				DESCRIPTION							



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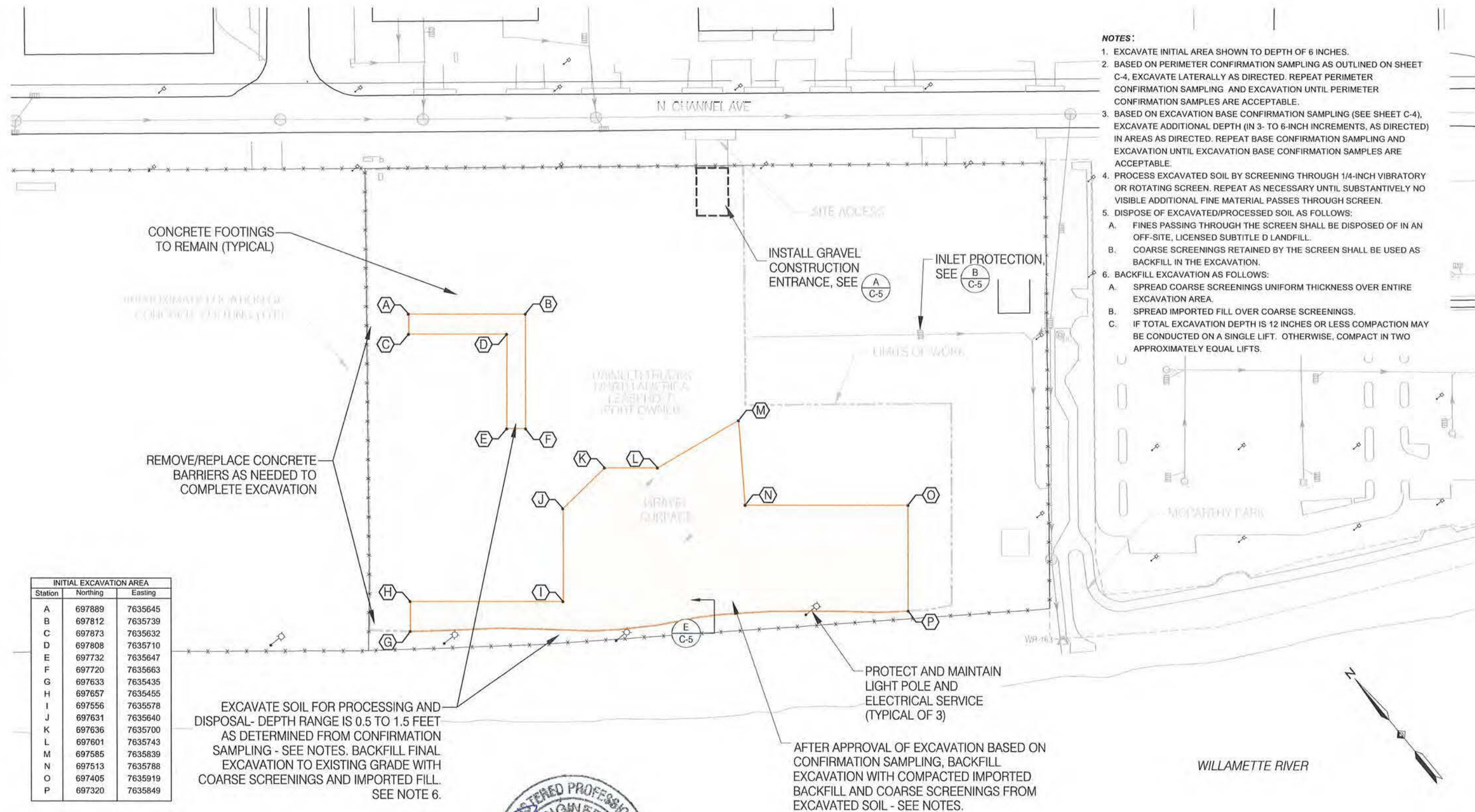
EXTERNAL REFERENCE FILES	

SUBMITTED: Herb Clough
PRINCIPAL ENGINEER

DATE: 11/7/13

BASE PLAN
REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

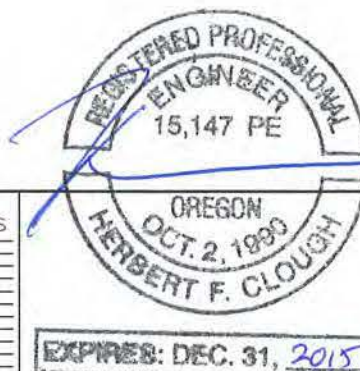
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SITE DRAWINGS	
APEX PROJECT NUMBER	
1115-16.003	
SCALE	
1" = 100'	
DRAWING NUMBER	
C-2	
SHEET NUMBER	
3 OF 6	



- NOTES:**
- EXCAVATE INITIAL AREA SHOWN TO DEPTH OF 6 INCHES.
 - BASED ON PERIMETER CONFIRMATION SAMPLING AS OUTLINED ON SHEET C-4, EXCAVATE LATERALLY AS DIRECTED. REPEAT PERIMETER CONFIRMATION SAMPLING AND EXCAVATION UNTIL PERIMETER CONFIRMATION SAMPLES ARE ACCEPTABLE.
 - BASED ON EXCAVATION BASE CONFIRMATION SAMPLING (SEE SHEET C-4), EXCAVATE ADDITIONAL DEPTH (IN 3- TO 6-INCH INCREMENTS, AS DIRECTED) IN AREAS AS DIRECTED. REPEAT BASE CONFIRMATION SAMPLING AND EXCAVATION UNTIL EXCAVATION BASE CONFIRMATION SAMPLES ARE ACCEPTABLE.
 - PROCESS EXCAVATED SOIL BY SCREENING THROUGH 1/4-INCH VIBRATORY OR ROTATING SCREEN. REPEAT AS NECESSARY UNTIL SUBSTANTIVELY NO VISIBLE ADDITIONAL FINE MATERIAL PASSES THROUGH SCREEN.
 - DISPOSE OF EXCAVATED/PROCESSED SOIL AS FOLLOWS:
 - FINES PASSING THROUGH THE SCREEN SHALL BE DISPOSED OF IN AN OFF-SITE, LICENSED SUBTITLE D LANDFILL.
 - COARSE SCREENINGS RETAINED BY THE SCREEN SHALL BE USED AS BACKFILL IN THE EXCAVATION.
 - BACKFILL EXCAVATION AS FOLLOWS:
 - SPREAD COARSE SCREENINGS UNIFORM THICKNESS OVER ENTIRE EXCAVATION AREA.
 - SPREAD IMPORTED FILL OVER COARSE SCREENINGS.
 - IF TOTAL EXCAVATION DEPTH IS 12 INCHES OR LESS COMPACTION MAY BE CONDUCTED ON A SINGLE LIFT. OTHERWISE, COMPACTION MAY BE CONDUCTED ON TWO APPROXIMATELY EQUAL LIFTS.

INITIAL EXCAVATION AREA		
Station	Northing	Easting
A	697889	7635645
B	697812	7635739
C	697873	7635632
D	697808	7635710
E	697732	7635647
F	697720	7635663
G	697633	7635435
H	697657	7635455
I	697556	7635578
J	697631	7635640
K	697636	7635700
L	697601	7635743
M	697585	7635839
N	697513	7635788
O	697405	7635919
P	697320	7635849

Note: OR83-NIF/NAD83 Oregon State Plane, North Zone, US Foot, surveyed to datum WGS84.



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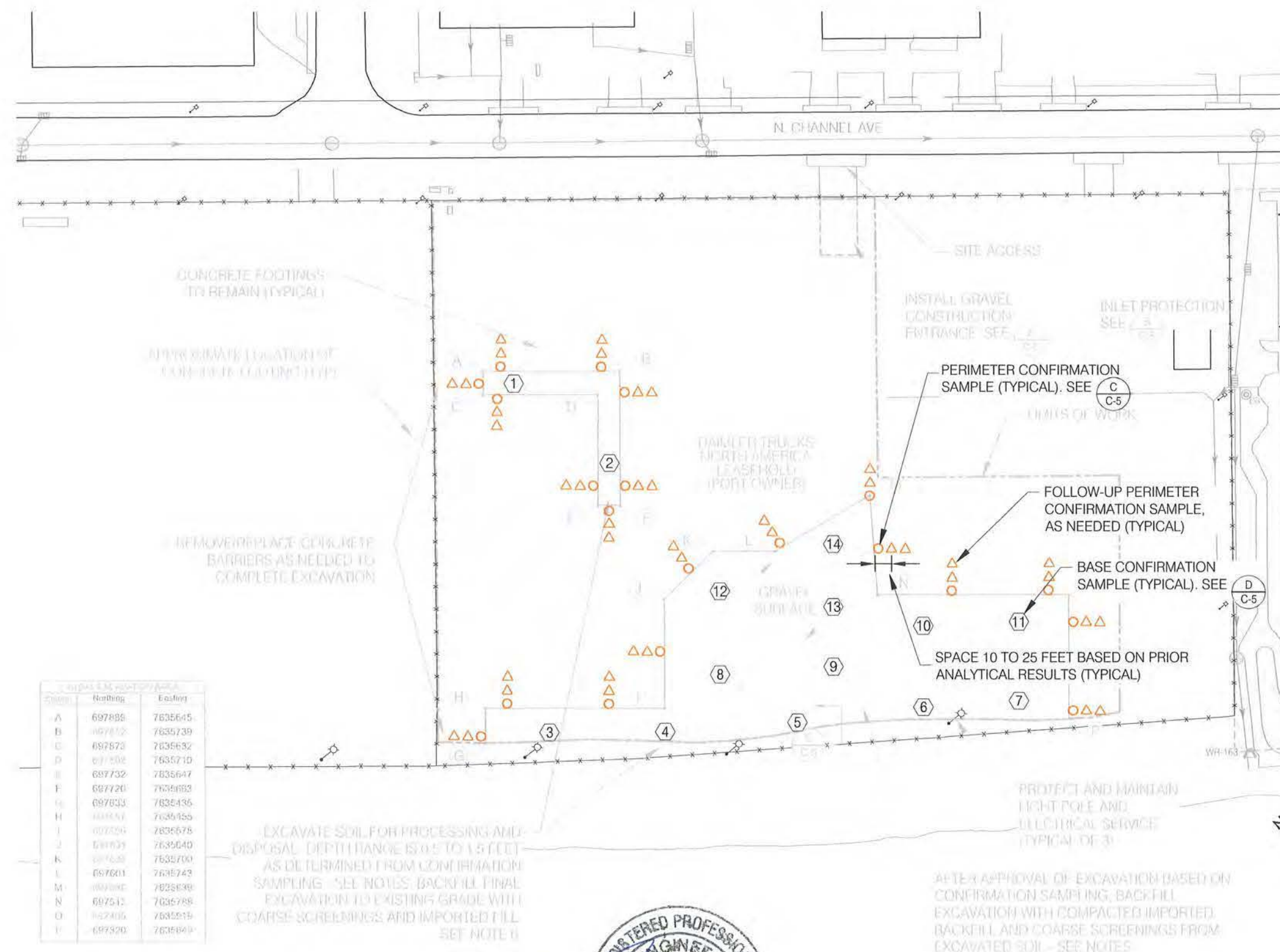
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EXTERNAL
REFERENCE FILES

REVISIONS			
ZONE	REV.	DESCRIPTION	BY DATE APP

**EROSION CONTROL, GRADING,
AND FILL PLAN**
REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

FILENAME:
SITE DRAWINGS
APEX PROJECT NUMBER
1115-16.003
SCALE
1" = 100'
DRAWING NUMBER
C-3
SHEET NUMBER
4 OF 6



NOTES:

1. SAMPLES TO BE COLLECTED AND ANALYZED BY APEX COMPANIES.
2. PERIMETER CONFIRMATION SAMPLES TO BE COLLECTED IMMEDIATELY AFTER INITIAL 6-INCH DEEP EXCAVATION AT EACH SAMPLE LOCATION. SAMPLING REPEATED AT EACH LOCATION WHERE ADDITIONAL EXCAVATION CONDUCTED.
3. BASE CONFIRMATION SAMPLES TO BE COLLECTED AFTER INITIAL 6-INCH DEEP EXCAVATION AT EACH LOCATION. SAMPLING REPEATED AT EACH LOCATION WHERE ADDITIONAL EXCAVATION CONDUCTED.
4. BASE CONFIRMATION SAMPLES WILL BE COLLECTED FOR EACH 5,000 SQUARE FEET OF ADDITIONAL LATERAL EXCAVATION.
5. CONFIRMATION SAMPLES WILL BE COLLECTED FOR EACH 5,000 SQUARE FEET OF AREA AFTER CLEANUP OF THE PROCESSING AREA.
6. SAMPLE RESULTS WILL BE AVAILABLE BY 10:00AM OF THE SECOND DAY AFTER SAMPLE COLLECTION.

SAMPLE STATIONS		
PERIMETER LOCATIONS		
Location	Northing	Easting
AB1	697880	7635657
AB2	697823	7635726
AC	697881	7635638
BF1	697798	7635727
BF2	697733	7635674
CD	697865	7635641
DE	697746	7635659
EF	697726	7635655
GH	697638	7635439
HI1	697645	7635470
HI2	697587	7635540
IJ	697595	7635610
JK	697634	7635674
LM	697600	7635750
M	697585	7635839
MN	697547	7635812
NO1	697470	7635839
NO2	697416	7635906
OP1	697386	7635904
OP2	697325	7635854

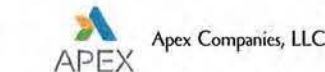
BASE LOCATIONS		
Location	Northing	Easting
BASE 1	697864	7635659
BASE 2	697755	7635679
BASE 3	697604	7635485
BASE 4	697539	7635565
BASE 5	697471	7635661
BASE 6	697410	7635756
BASE 7	697360	7635825
BASE 8	697547	7635635
BASE 9	697489	7635717
BASE 10	697466	7635802
BASE 11	697414	7635870
BASE 12	697604	7635682
BASE 13	697530	7635751
BASE 14	697573	7635787

Station	Northing	Easting
A	697880	7635645
B	697812	7635739
C	697873	7635632
D	697798	7635710
E	697732	7635647
F	697720	7635683
G	697633	7635436
H	697587	7635455
I	697595	7635678
J	697639	7635640
K	697630	7635700
L	697601	7635742
M	697585	7635839
N	697547	7635788
O	697406	7635819
V	697320	7635649

Note: OR83-NIF/NAD83 Oregon State Plane, North Zone, US Foot, surveyed to datum WGS84.



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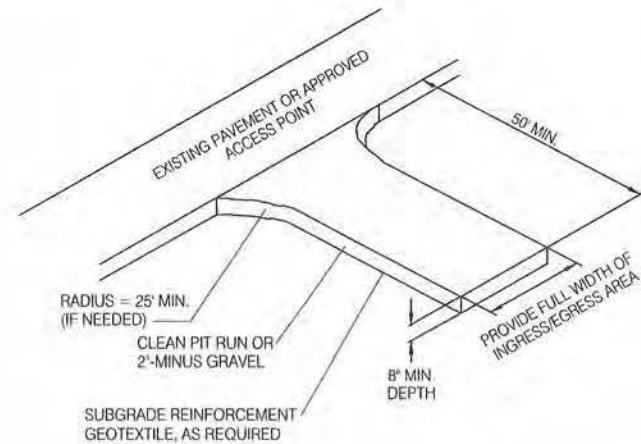
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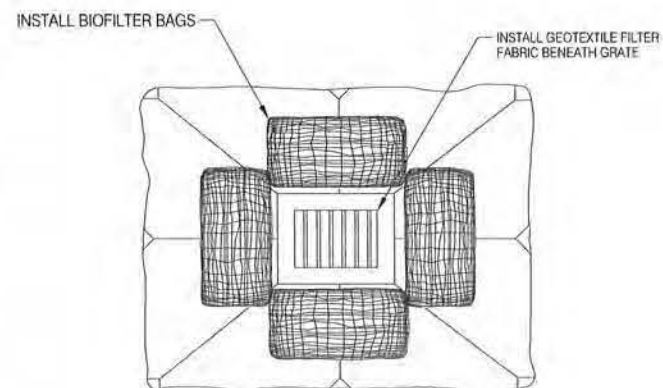
SAMPLING PLAN
REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

FILENAME:
SITE DRAWINGS
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1115-16.003
SCALE
1" = 100'
DRAWING NUMBER
C-4
SHEET NUMBER
5 OF 6



GRAVEL CONSTRUCTION ENTRANCE
SCALE: NTS

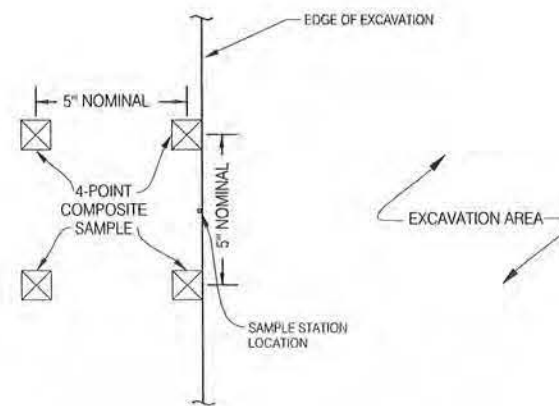
A
C-5



NOTE:
1. BIOFILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1" X 2" WOODEN STAKES OR APPROVED EQUAL PER BAG.

TEMPORARY INLET PROTECTION
SCALE: NTS

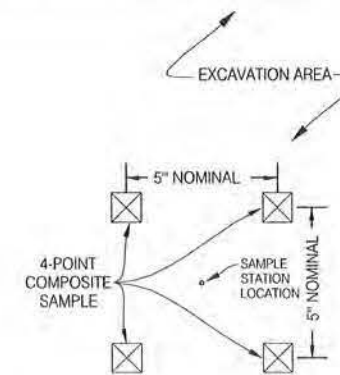
B
C-5



NOTES:
1. COLLECT SAMPLE OVER 0 TO 6 INCH DEPTH RANGE.
2. SAMPLES TO BE COLLECTED BY APEX AND ANALYZED FOR ARSENIC.

PERIMETER CONFIRMATION SAMPLE
SCALE: NTS

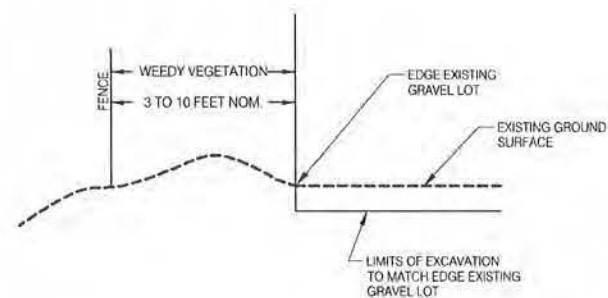
C
C-5



NOTES:
1. COLLECT SAMPLE OVER 0 TO 6 INCH DEPTH RANGE.
2. SAMPLES TO BE COLLECTED BY APEX AND ANALYZED FOR ARSENIC.
3. COLLECT ONE COMPOSITE SAMPLE FOR EACH 5,000 SQUARE FEET OF EXCAVATION.

EXCAVATION BASE CONFIRMATION SAMPLE
SCALE: NTS

D
C-5



SOUTHWEST EDGE EXCAVATION
SCALE: NTS

E
C-5



SUBMITTED: Herb Clough
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EXTERNAL
REFERENCE FILES



REVISIONS					
ZONE	REV	DESCRIPTION	BY	DATE	APP

DETAILS
REMOVAL ACTION
SWAN ISLAND UPLAND FACILITY OPERABLE UNIT 2
PORTLAND, OREGON

FILENAME:
SITE DRAWINGS
APEX PROJECT NUMBER
1115-16.003
SCALE
NTS
DRAWING NUMBER
C-5
SHEET NUMBER
6 OF 6

CONSTRUCTION SPECIFICATIONS

REMOVAL ACTION SWAN ISLAND UPLAND FACILITY PORTLAND, OREGON

Prepared for
Port of Portland

Prepared by
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

January 2014



Seal

SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work includes but is not limited to:

Soil with arsenic above the DEQ default background concentration of 8.8 mg/kg will be excavated, gravel separated from sand using a No. 4 sieve, the gravel will be returned to the site, and the finer fraction will be disposed of off-site in a licensed solid waste landfill. Imported crushed rock will be used to backfill the remainder of the excavation. Excavation depths will range from approximately 6 to 15 inches (up to 1.25 feet). Final depths will be based on confirmation sampling to be completed by Apex.

The total quantity of soil to be excavated is estimated to range from 1,100 to 5,200 cubic yards (1,900 to 8,800 tons, respectively). Approximately 800 to 3,500 tons respectively of the total consist of gravel that will be separated by sieving and returned to the site. The remainder will be disposed of off-site.

1.2 WORK AREA RESTRICTIONS

- A. Plan and perform the work in accordance with the following restrictions:
1. The tenant where the work will be performed requires advance notice, planned work schedule, and drawings defining the work area. Twenty-one days prior to start of the work, provide to Apex the start date (first date when any activity will commence on the site) and proposed project schedule.
 2. Allowable work hours are 7 am to 7 pm, 7 days per week.

1.3 PERMITS

- A. Apex is in the process of obtaining the following permit.
1. Grading Permit
- B. The Subcontractor shall familiarize himself with the permit and ensure full compliance with all of its conditions.
- C. Conflicts, if any, between the contract documents and issued permits, observed by the Subcontractor, shall be brought to the attention of Apex immediately.

1.4 SOILS INFORMATION

- A. A record of soil exploration in the vicinity of this work is available at Apex for examination by the Subcontractor upon request. Apex makes no representation as to the completeness or accuracy of this information.
- B. A record of soil exploration in the vicinity of this work is included as Engineering Design Report.

1.5 KNOWN SITE CONDITIONS AFFECTED BY REGULATORY AGENCIES

- A. The following materials or conditions are known to exist on the construction site. The Subcontractor shall comply with federal, state, or local agencies' ordinances or regulations pertaining to these conditions. A record of soil chemical data in the vicinity of this work is available at Apex for examination by the Subcontractor upon request. Apex makes no representation as to the completeness or accuracy of this information.
 - 1. Heavy metals.

1.6 UNEXPECTED SITE CONDITIONS

- A. Suspected Hazardous or Environmentally Sensitive Conditions:
 - 1. If the Subcontractor encounters suspected hazardous or environmentally sensitive conditions in the work area beyond those mentioned in these specifications or the drawings, the Subcontractor shall immediately stop all work in the area of the suspected condition and notify Apex.
 - 2. Apex will make arrangements for testing and appropriate abatement, if required.
 - 3. The Subcontractor shall alert his employees to these facts and shall assure that no operations occur that disturb the suspected hazardous or environmentally sensitive condition.
- B. Suspected Contaminated Soil:
 - 1. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex.
 - 2. Contaminated soil is soil that produces fuel or chemical odors, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated. Apex will characterize contaminated soil and obtain the profile for disposal. The Port will determine the location of disposal.
- C. Historical or Archaeological Conditions:
 - 1. If the Subcontractor encounters materials suspected to be of historical or archaeological significance, or materials that are otherwise incongruous with their surroundings, he shall immediately stop work in that location and notify Apex. Do not proceed with the work until further direction has been given by Apex.

1.7 INTERNATIONAL BUILDING CODE

- A. Work shall conform to the International Building Code (IBC), as amended by the OSSC, State of Oregon and as enforced by the City of Portland Bureau of Development Services.

1.8 PROGRESS MEETINGS

- A. Job meetings may be held between the Subcontractor and Apex. The time and place of the meetings will be established by Apex.

END OF SECTION 011100

SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.1 INCIDENTAL WORK

- A. Consider work not listed, but necessary to complete the work, as incidental. Each bid item has incidental work associated with it. Some of the incidentals are identified. However, the list is not complete. This does not relieve the Subcontractor from the responsibility for completing the incidental work. Incidental work includes, but is not limited to, project meetings, compacting, grading, hauling, mixing, placing, shaping, and watering, as specified.

1.2 WEIGHING, WEIGH AND TRUCK MEASURE DELIVERY TICKETS

- A. A ton is 2,000 pounds. Measure and compute weight to the nearest one-tenth (0.1) of a ton.
- B. Weigh on certified public or private scales. The scales shall be of a capacity, kind, size and type suitable for the weighing to be done. Scales shall be tested, sealed, and certified by an acceptable certifying authority. Apex may order recertification of scales to ensure accuracy. Recertification shall be at no added cost to Apex.
- C. Within one day after delivery, submit a weight delivery ticket to Apex for each load. Payment will only be made for material accounted for on a delivery ticket. Delivery tickets shall state project name, product delivered, date and time weighed, name and signature of the weigh master, and name of the truck driver.
- D. Where items are paid by truck measure, each haul unit shall be measured by the Port and the Subcontractor jointly to determine the truck volume. Give each haul unit a unique number which is clearly shown on the unit. Submit a delivery ticket to the inspector for each load. Payment will only be made for material accounted for on a delivery ticket. Delivery tickets shall state project name, product delivered, haul unit number, date and time of delivery, and the driver's name and signature. Heap loads to the satisfaction of the inspector to assure that delivered volume is equal to the truck volume as measured by the Port and the Subcontractor.

1.3 BID ITEMS

- A. Payment constitutes total compensation for furnishing materials; for preparation of these materials; and for labor, equipment, tools and incidentals necessary to complete the work as specified and shown on the drawings. Measurement will not include unauthorized work performed beyond the design limits. Replace material removed without authorization at no added cost to Apex. The method of measurement and the basis of payment for bid items will be as follows.

1.4 APPLICABILITY OF UNIT PRICES

- A. If provided, quantities are for information or bidding purposes only. Unit prices shall be applicable to any quantity actually used.

PART 2 - BID ITEMS – PRIMARY BID

1 MOBILIZATION, SURVEYING, CLEANUP, AND DEMOBILIZATION – L.S.

- A. Payment will be made at the contract lump sum price for mobilization and demobilization of personnel, equipment, supplies, offices and other facilities necessary for the work; surveying; and cleanup. The price includes premium on bonds and insurance, health and safety plan, temporary facilities, site controls such as work zones and erosion control, incidental clearing/disposal of vegetation, and other costs which are incurred before beginning the work or that are not otherwise included in other bid items.
- B. Payment will be made at 50 percent upon completion of mobilization and 50 percent upon completion of all work (including any final submittals).

2 ARSENIC SOIL EXCAVATION AND PROCESSING – C.Y.

- A. Pay quantity will be the number of cubic yards of material excavated. Quantity will be measured in its original position and computed to the neat line excavation grades shown on the drawings, plus the surveyed additional excavation directed by Apex. Measurement will not include debris above ground, yardage excavated without authorization beyond the design grades, nor yardage used for purposes other than those directed. The price includes excavation; mechanical separation of fines and gravel; and load, haul, placement, and compaction of the gravel fraction in the excavation. This item includes all material handling, processing, and final disposition of excavated soil except for that explicitly covered in bid items 3 and 4.
- B. Payment will be made at the contract unit price per cubic yard.

3 ARSENIC SOIL ADDITIONAL PROCESSING – C.Y.

- A. Pay quantity will be the number of cubic yards, by truck measure, of material processed after the first pass through the mechanical sieving process. Measurement will include only that material where additional processing is directed.
- B. Payment will be made at the contract unit price per cubic yard.

4 ARSENIC SOIL LOAD, HAUL, AND DISPOSAL – TON

- A. Pay quantity will be the number of tons of material disposed of in the solid waste landfill. Quantity will be determined from submitted weigh slips from the solid waste landfill.
- B. Payment will be made at the contract unit price per ton.

5 IMPORT BACKFILL FURNISH AND PLACE – TON

- A. Pay quantity will be the number of tons of material placed. Quantity will be determined from submitted weigh slips from the fill supplier. The price includes purchase, haul, placement, and compaction.
- B. Payment will be made at the contract unit price per ton.

PART 3 - BID ITEMS – ALTERNATE BID

1 MOBILIZATION, SURVEYING, CLEANUP, AND DEMOBILIZATION – L.S.

- A. Payment will be made at the contract lump sum price for mobilization and demobilization of personnel, equipment, supplies, offices and other facilities necessary for the work; surveying; and cleanup. The price includes premium on bonds and insurance, health and safety plan, temporary facilities, site controls such as work zones and erosion control, incidental clearing/disposal of vegetation, and other costs which are incurred before beginning the work or that are not otherwise included in other bid items.
- B. Payment will be made at 50 percent upon completion of mobilization and 50 percent upon completion of all work (including any final submittals).

2 ARSENIC SOIL EXCAVATION, LOAD, HAUL, AND DISPOSAL – TON

- A. Pay quantity will be the number of tons of material disposed of in the solid waste landfill. Quantity will be determined from submitted weigh slips from the solid waste landfill.
- B. Payment will be made at the contract unit price per ton.

3 IMPORT BACKFILL FURNISH AND PLACE – TON

- A. Pay quantity will be the number of tons of material placed. Quantity will be determined from submitted weigh slips from the fill supplier. The price includes purchase, haul, placement, and compaction.
- B. Payment will be made at the contract unit price per ton.

END OF SECTION 012200

SECTION 013100 - PROJECT MANAGEMENT, COORDINATION, AND SAFETY

PART 1 - GENERAL

1.1 PORT OPERATIONS

- A. Work in coordination and cooperation with the Port, Port Tenants, and other contractors so that normal operations may be carried on without interruption.
- B. Port/Tenant operations may require that certain of the Subcontractor's operations be scheduled around Port/Tenant activities. Certain areas of work may be required to be bypassed and accomplished when Port/Tenant operations permit.

1.2 OTHER CONTRACTORS

- A. The Port reserves the right to award other contracts for work in the vicinity of work covered by this contract.

1.3 SUBCONTRACTOR'S COORDINATION

- A. The Subcontractor is responsible for overall coordination of the work.

1.4 HEALTH AND SAFETY

- A. Subcontractor shall be responsible for site safety and prepare a health and safety plan for its employees and visitors that complies with all applicable U.S. Department of Labor OSHA regulations. Seven days prior to beginning site work, Subcontractor shall submit to Apex a copy of the site health and safety plan.
- B. The Subcontractor shall warrant that all its employees who are permitted to engage in hazardous waste operations which could expose them to hazardous substances, safety, or health hazards have obtained the necessary health and safety training and medical monitoring as specified in 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and all applicable federal, state and local laws, regulations, and ordinances regarding health and safety. Seven days prior to beginning site work, Subcontractor shall submit evidence that personnel have current appropriate training and, as applicable, are subject to a medical surveillance program.

END OF SECTION 013100

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 TEMPORARY UTILITIES

- A. Make arrangements for obtaining temporary water, electric power, telephone, and other services, as needed.
- B. Maintain temporary facilities in a safe and proper manner and completely remove from the site prior to final acceptance.
- C. Provide labor and equipment for temporary lines and services at no added cost to Apex.

1.2 SANITARY FACILITIES

- A. Provide and maintain sanitary facilities which meet the requirements of applicable state and local health regulations.

1.3 FIRE PROTECTION

- A. Provide adequate fire fighting equipment to contain an equipment fire. Make available and accessible in the work area.

1.4 DUST CONTROL

- A. If conditions exist that cause dust or soil to become windblown or otherwise entrained in the air by vehicular traffic or equipment activities, employ methods to control and abate nuisance dust conditions including, but not limited to:
 - 1. Covering excavated, graded, disturbed areas, or stockpiles with tarps or sheeting until removed from the site or finished in accordance with the contract documents.
 - 2. Cleaning, sweeping, or vacuuming areas to remove the dust source.
 - 3. Removing or relocating dust-creating materials or activities to other areas that will eliminate the dust problem.
 - 4. Applying dust control agents such as water, or water misting, to the dust source. Application of any wetting agents other than water require the written approval of the Port prior to use.
 - a. Application of dust control agents is not acceptable for materials that will dissolve in water or become friable.
 - b. Materials that will dissolve in water or become friable when wetted shall be stored only on impervious surfaces, field-installed ground sheeting, or other barriers.
 - c. Run-off from wetted materials shall be controlled to prevent contamination of other portions of the site.

1.5 NOISE CONTROL

- A. Comply with local noise control regulations.

1.6 SOLID WASTE MANAGEMENT

- A. The Subcontractor shall be solely responsible for determining the proper disposition of all solid waste, including documentation showing that the solid waste and recyclables are not regulated as hazardous waste in accordance with state and federal regulations. Upon request, this documentation shall be made available to Apex.
- B. Receptacles:
 - 1. All drop boxes, bins, totes, and cans located in areas exposed to wind or precipitation shall be equipped with metal, canvas, or plastic covers. Drop boxes, bins, totes, and cans shall be kept closed at all times, except when adding waste material.
 - 2. Where possible, large receptacles such as drop boxes, bins, and totes shall be placed on impervious areas such as concrete or asphalt pavement at locations away from public traffic, storm drain inlets, ditches, and other conveyances.
 - 3. If any receptacle is observed to be leaking any liquid, it shall be considered a solid waste leachate. The Subcontractor shall immediately take action to contain the leakage.
 - 4. Discarding of aerosol cans, used oil, paints, solvents, fluorescent light tubes, or any hazardous waste into the receptacle is strictly prohibited.
 - 5. Receptacles larger than 33-gallon capacity used for recyclables and general solid waste and portable toilets shall not be located within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland.
 - 6. Ensure that all recyclable and solid waste receptacles are kept closed, are not overfilled, are not leaking, and general housekeeping is performed in the area.
 - 7. All recyclable and general solid waste hauled from the site shall be secured prior to leaving the work site so that no waste material blows out, falls out, or leaks out during transportation to the designated offsite location.

1.7 DISPOSAL

- A. Dispose of waste material off Port property and in accordance with applicable state, federal, and local regulations.
- B. Burning or burying of waste material within Port property is not permitted.
- C. Disposal of waste material within the area cleared, a river, stream, wetland, or other waterway or waterfront is not permitted.

1.8 OWNERSHIP OF MATERIAL REMOVED FROM PORT PROPERTY

- A. Unless directed otherwise in the specifications, the Subcontractor accepts ownership of material removed from the site under this contract, and accepts all costs and liability associated with its handling, transportation, removal, and disposal. The Subcontractor releases the Port and Apex

from any claims, actions, proceedings, damages, liabilities, and expenses of every kind, whether known or unknown, resulting from or arising out of such material.

1.9 STAGING, PARKING, AND WORK AREA

- A. Access to and from staging, parking, and work areas shall be as shown on the drawings.
- B. Employees' vehicles shall be parked in the staging/employee parking area. The Subcontractor shall be responsible for transporting workers between the parking area and the work area.
- C. Only marked Subcontractor-owned or operated vehicles required for proper execution of the work will be allowed in the work area. No private passenger vehicles will be admitted.
- D. Where the Subcontractor's lock is used for access through Port gates, mark the lock to identify the Subcontractor. Place the lock in series with existing locks. Take care to assure that no existing lock is omitted from the series. Remove the Subcontractor's lock upon completion of the work. Failure to adhere to these requirements will result in the Subcontractor's lock being removed by the Port.

1.10 STORAGE AND PROTECTION OF MATERIAL AND EQUIPMENT

- A. The drawings designate the area in which the Subcontractor may store material and equipment.
- B. Protect materials and equipment from damage, pilfering, etc., and fully relieve the Port and Apex of this responsibility.
- C. Upon completion of the work, remove unused materials and equipment and restore the area to original condition, including any grading necessary to restore drainage patterns and surface smoothness.
- D. Store materials to be salvaged by the Subcontractor in the staging area.
- E. Store plant material delivered to the work area that cannot be planted within 4 hours in the area designated by the Port for the heeling-in of plant material.

1.11 WARNING SIGNS AND BARRICADES

- A. Before starting work, provide and have available all signs, flaggers, escort vehicles and drivers, barricades, and lights necessary for protection of the work.
- B. Install and maintain adequate warning signs and lighted barricades to protect property and personnel in the work area. Barricades shall be weighted or anchored to prevent overturning from wind.

- C. Barricade design shall conform to recommendations in the Manual on Uniform Traffic Control Devices, Type II barricade, minimum. Mount a Type A barricade warning light flasher on top of each barricade. Keep flashers visible and operating at all times.
- D. Space barricades a maximum of 20 feet apart unless directed otherwise by Apex.
- E. Relocate barricades, at the direction of Apex, whenever required to maintain protection of the work area or when changing work areas.
- F. Open trenches, excavations, or obstructions not being actively worked shall be marked with lighted and weighted barricades which can be seen from a reasonable distance.

1.12 TRANSPORTATION OF MATERIAL

- A. If shipments of hazardous material (including hazardous debris, contaminated soil or water, and hazardous waste) will be unloaded onto or loaded from Port property, the Subcontractor shall have a qualified person available onsite when shipments are received or made who is current with U.S. Department of Transportation (DOT) approved training for the transportation of hazardous materials. The storage and shipment of hazardous waste shall also comply with the requirements of these specifications.
- B. Ensure that hazardous goods and material delivered to or from the construction site meet applicable DOT labeling and placarding requirements.
- C. Properly characterize and manifest waste material leaving Port property for disposal.
- D. Minimize and abate the creation of nuisance dust conditions during the loading and unloading of vehicles used to haul debris, rubble, soil, trash, or other material that may create dust during loading or unloading operations.
- E. Before leaving the loading area, adequately secure and cover vehicles used to haul debris, rubble, soil, trash, or other material that may be blown or fall during transportation onsite or over public thoroughfares.
- F. In areas that may result in the tracking of soil, sediments, or hazardous materials on the wheels of hauling equipment outside areas that are enclosed by erosion and silt/sediment control devices, the Subcontractor shall provide the means and methods to remove these materials prior to the vehicle exiting the controlled area. If water wash stations are used, the Subcontractor shall provide systems for the collection, treatment, and disposal of wheel wash water and accumulated sediment.

1.13 TRAFFIC CONTROL

- A. The work is in areas where there may be tenant truck traffic. Make arrangements for the safe handling of traffic in the work area, and coordinate the work with Apex.

- B. Schedule and phase work to maintain movement of traffic through the work area. Provide signing, barricades, markers, flaggers, and other traffic regulation to maintain safe and efficient control of traffic around or through the work area. Types of devices and their use shall conform to Part VI of the "Manual on Uniform Traffic Control Devices for Streets and Highways - USDOT/FHA."
- C. Keep pavement surfaces free and clear of dirt, mud, and debris.
- D. Keep a minimum of one lane of traffic open at all times. Provide flaggers to control congestion. At the end of each workday, open all lanes to traffic.

1.14 HAUL ROUTE CONSTRUCTION AND MAINTENANCE

- A. The term "haul route" applies to any designated paved or unpaved road used by the Subcontractor for travel of construction equipment.
- B. Construction equipment shall follow agreed-upon haul routes.
- C. Do not cross electrical or communication cables unless protected by approved means.
- D. Equipment operated on haul routes over existing pavements shall conform to legal load limits for public highways unless approved protection is provided. Keep pavement areas free of material spillage and foreign matter at all times. Continuously clean pavement surfaces with regenerative-air vacuum sweepers.
- E. Maintain haul routes over unpaved areas in good usable condition during the course of the work. Sprinkle roads as necessary to prevent dust.
- F. Construct, maintain, and restore haul routes to the satisfaction of Apex. Cost shall be considered an incidental item.

1.15 HARD HATS AND SAFETY CLOTHING

- A. Wear hard hats and high visibility clothing that comply with current ANSI requirements. All safety equipment shall be in good repair.

END OF SECTION 015000

SECTION 015713 - TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section describes temporary measures and monitoring to control water pollution, soil erosion, and siltation. Erosion, sediment, and pollutant control (ESPC) devices or methods include the use of berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, sediment (filter) fences, grasses, slope drains, and other techniques.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 312000, Site Clearing and Earthwork

1.3 REFERENCES AND APPLICABLE CODES

- A. National Pollutant Discharge Elimination System (NPDES) General Permit 1200-CA dated February 20, 2001.
- B. City of Portland, Erosion Control Manual.
- C. City of Portland Title 10, Chapter 10.10 – 10.80.
- D. OR UIC: Oregon Underground Injection Control

1.4 PERMITS

- A. The Port is the administrator of the NPDES General Permit 1200-CA for the Discharge of Construction Site Runoff to Public Waters on projects performed by or for the Port on Port property. A copy of the permit and its regulations are on file at the Port's Engineering offices. The Port is mandated by law to comply with this permit. The SubSubcontractor shall comply with the requirements of the permit as noted in these specifications.
- B. Apex is in the process of obtaining a grading permit that will include City of Portland approval for the ESPC measures shown on the drawings. The Subcontractor shall satisfy all ESPC requirements set forth by the City of Portland.

1.5 SUBMITTALS

- A. At the pre-construction meeting, submit the following supplemental ESPC information:
 - 1. Construction start and completion dates.
 - 2. Dates when ESPC measures will be in place.
 - 3. Projected date of removal of erosion control structures (after soil is stabilized by vegetation or pavement).
 - 4. Description of procedures for prompt maintenance or repair of ESPC measures utilized on-site.
 - 5. Description of best management practices that will be used to prevent or minimize storm water from being exposed to pollutants from spills, cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery as well as debris, leftover paints, solvents, and glues from construction operations.
 - 6. Name, title, and telephone number of designated employee to perform the Subcontractor's inspection and monitoring of ESPC measures.
- B. Any requested changes or modifications to the ESPC measures shown on the drawings shall be submitted to Apex for approval prior to implementation. Upon request by Apex, the Subcontractor shall submit updated ESPC drawings which include the latest modifications.
- C. ESPC inspection records shall be submitted with the Subcontractor's monthly request for payment.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 GENERAL

- A. The implementation of the ESPC measures and the construction, performance monitoring, maintenance, replacement, and upgrading of the ESPC measures are the responsibility of the Subcontractor until all construction is completed and accepted and vegetation/landscaping is established.
- B. The ESPC measures shown on the drawings shall be constructed in conjunction with all clearing, grading, trenching, and earthwork activities and in a manner that ensures that sediment and sediment-laden water do not enter the drainage system, roadways, or violate applicable water quality standards.
- C. The ESPC measures shown on the drawings are the minimum requirements for anticipated site conditions and Subcontractor methods and sequences. During the construction period, the

ESPC measures shall be upgraded as needed for unexpected conditions, storm events, or Subcontractor methods or sequences and to ensure that sediment and sediment-laden water do not leave the site.

- D. The Subcontractor shall be responsible for implementing temporary erosion control measures during construction to correct unforeseen conditions. The Subcontractor shall be responsible for additional erosion control due to the Subcontractor's negligence, carelessness, or failure to install planned controls as a part of the work.
- E. Implementation, construction, and maintenance of ESPC measures shall be in accordance with the City of Portland Erosion Control Manual.
- F. Do not begin soil disturbance activities until ESPC measures are in place.
- G. Schedule and perform ground disturbance activities in order to minimize impact to the overall project.
- H. The erosion control drawings together with the supplemental ESPC information constitute the ESPC plan. A copy of the ESPC plan shall be retained on site and made available to Apex upon request.

3.2 CONSTRUCTION DETAILS

- A. No visible or measurable erosion material or pollutant shall exit the construction site. Visible or measurable is defined as:
 - 1. Deposits of mud, dirt, sediment or similar material exceeding 1/2 cubic foot in volume in any area of 100 square feet or less on public or private streets, adjacent property, or into the storm and surface water system, either by direct deposit, dripping, discharge, or as a result of the action of erosion.
 - 2. Evidence of concentrated flows of water over bare soils; turbid or sediment laden flows; or evidence of on-site erosion such as rivulets on bare soil slopes, where the flow of water is not filtered or captured on the site.
 - 3. Earth slides, mud flows, earth sloughing, or other earth movement which leaves the property.
- B. Employ all reasonable means and methods to control or divert upslope stormwater runoff away from cleared and grubbed areas, stockpiled materials, and other disturbed areas that will be open or stockpiled for periods longer than 2 weeks.
- C. Construction entrances, exits, and parking areas shall be graveled or paved to reduce the tracking of sediment onto public or private roads. Maintain for the duration of the project.
- D. Unpaved roads on the site shall be graveled or under other effective erosion and sediment control measures, either on the road or down gradient, to prevent sediment and sediment-laden water from leaving the site.

- E. Preserve existing vegetation where practicable and revegetate open areas after grading or construction.
- F. Continuously secure or protect soil stockpiles from runoff and erosion throughout the project with temporary soil stabilization measures or protective cover.
- G. Provide ongoing maintenance, repair, and restoration of ESPC measures to keep them continually functional.
 - 1. The following maintenance activities shall be included:
 - a. Visual or measurable amounts of sediment and pollutants that leave the site shall be cleaned up immediately and placed back on the site or properly disposed. Under no conditions shall sediment be intentionally washed into storm sewers or drainage ways.
 - b. Clean catch basin protection when design capacity has been reduced by 50 percent.
 - c. Remove sediment trapped by sediment fences before it reaches one third of the above-ground fence height.
 - d. Remove trapped sediments from sediment basins when design capacity has been reduced by 50 percent.
- H. If fertilizers are used to establish vegetation, the application rates shall follow manufacturer's guidelines and the application shall be done in a way that minimizes nutrient-laden runoff to receiving waters.
- I. If construction activities cease for 30 days or more, the entire site shall be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
- J. Any use of toxic or other hazardous materials shall include proper storage, application, and disposal.
- K. When trucking saturated soils from the site, either watertight trucks shall be used or loads shall be drained on-site until dripping has been eliminated.
- L. Clean all catch basins and inlets protected from sediment prior to final acceptance. The cleaning operation shall not flush sediment laden water into the downstream system.
- M. ESPC measures installed during construction shall be removed when construction and site disturbance activity are complete and permanent soil stabilization is in place.
- N. Remove and dispose of waste and unused building material.

3.3 MONITORING AND REPORTING REQUIREMENTS

- A. The Subcontractor shall designate an employee to perform inspections of ESPC measures. The employee shall have knowledge and experience in construction storm water controls and management practices.

- B. Inspect erosion control measures daily and maintain as necessary to ensure their continued functioning.
- C. For inactive periods of work, inspect ESPC measures at least once every 14 days and within 24 hours after any storm with precipitation greater than 0.5 inches per 24-hour period.
- D. Visibly monitor storm water runoff to evaluate the effectiveness of the erosion control measures or practices. If visible quantities of sediment are leaving the property, take corrective action immediately. Notify Apex of all corrections and violations.
- E. The Subcontractor shall keep a record of inspections. This record shall be made available to Apex upon request and shall be submitted with each request for payment.
- F. Visual inspections shall document the following information:
 - 1. Inspection date, inspector's name, weather conditions, and rainfall amount for past 24 hours (inches). (Rainfall information can be obtained from the nearest weather recording station.)
 - 2. List observations of all best management practices (BMPs): Erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and nonstormwater controls.
 - 3. At representative discharge location(s) from the construction site, conduct observation and document the quality of the discharge for any turbidity, color, sheen, or floating materials. If possible, in the receiving stream, observe and record color and turbidity or clarity upstream and downstream within 30 feet of the discharge from the site. For example, a sheen or floating material shall be noted as present/absent. If present, it may indicate possible spill and/or leakage from vehicles or materials storage. Observation for turbidity and color shall describe any apparent color, the clarity of the discharge, and apparent differences compared with the receiving stream.
 - 4. If visual or measurable amounts of sediment are leaving the property, briefly explain the corrective measures taken to reduce the discharge and/or clean it up. Describe efforts to prevent future releases. The ESPC shall be amended accordingly.
 - 5. If a site is inaccessible due to inclement weather, the inspection shall include observations at a relevant discharge point or downstream location, if practical.

END OF SECTION 015713

SECTION 015719 - ENVIRONMENTAL CONSTRUCTION CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section describes required environmental practices for construction work on Port property.

1.2 SUBMITTALS

- A. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response that includes a map indicating storage site locations.
- B. If total petroleum product storage, including fuels and oil (e.g., drummed lubricants), exceeds 1,320 gallons, obtain special approval from the Port and submit a Spill Prevention Control and Countermeasures (SPCC) plan in accordance with federal regulations (40 CFR 112). Total storage is equal to the sum of all drums, receptacles, tanks, etc. equal to or greater than 55 gallons, including mobile storage tanks that are parked on site.
- C. Submit a monthly written report that provides:
 - 1. A complete inventory of all hazardous waste generated that month;
 - 2. The current inventory of Subcontractor-generated hazardous waste stored on Port property; and
 - 3. The date(s) the waste was placed into onsite storage.

1.3 EMERGENCY CONTACT AND NOTIFICATION INFORMATION

- A. Provide a notification sign with Subcontractor's appropriate emergency contact information, and including the Port's emergency dispatch number, in the following locations:
 - 1. Areas where fuel, hazardous waste, or hazardous liquid products are dispensed or stored.
 - 2. Areas where more than 42 gallons of hazardous materials are stored.
 - 3. On-board mobile motor fueling equipment. (If the mobile fueling equipment leaves Port property, the Port emergency dispatch notification sign shall be removed prior to leaving.)
 - 4. Tank farms on Port property.
 - 5. Asphalt or concrete plants on Port property.

1.4 RELEASE OF CONTAMINANTS

- A. Protect against the entry of petroleum products and other contaminants into a waterway (including river, stream, slough, wetland, etc.), other drainage system (including stormwater collection systems) or overland to any drainage ditch or swale.

- B. In the event of a spill outside a containment area:
 - 1. Notify Apex immediately if a spill occurs or if contamination is discovered which indicates a release of petroleum products or other contaminants to the environment.
 - 2. Immediately contain and remove the spilled material.
 - 3. If contaminants enter a waterway, immediately begin containment and cleanup.
- C. Notify the appropriate regulatory agencies and provide written follow-up. Submit to Apex copies of all reports, written follow-ups, documentations, and agencies responses.
- D. All cleanup costs, reporting requirements, fines, and fees shall be the sole responsibility of the Subcontractor.

1.5 SPILL KITS

- A. A clearly labeled spill kit shall be located within 50 feet of the following:
 - 1. Fueling areas.
 - 2. Liquid products storage and dispensing areas.
 - 3. Hazardous materials storage areas.
 - 4. Vehicle and equipment maintenance areas.
 - 5. Tank farm areas on Port property.
 - 6. Asphalt or concrete plant areas on Port property.
 - 7. Any surface water if work is being performed in the vicinity.
- B. Spill kits shall contain an ample supply of oil-absorbent ground booms, socks, pads, bagged sorbents, flat-blade shovels, salvage drums suitable for collection of spilled materials and absorbents, provisions for preventing spilled materials from entering any storm drain inlet or conveyance, supplies to protect at least two storm drain inlets, and personnel protective equipment suitable for the quantity and type of hazardous substances handled.
- C. Provide spill kits as described above for the following types of mobile equipment:
 - 1. Mobile fueling, maintenance, and storage equipment.
 - 2. Mobile equipment service vehicles (including oilers).
 - 3. Mobile tanker equipment (e.g., tanker vehicles used to apply bituminous tack material) and hazardous material transport vehicles.

1.6 HAZARDOUS MATERIAL MANAGEMENT

- A. General:
 - 1. Minimize the volume and number of locations where hazardous material is used and stored by the Subcontractor on Port property.
 - 2. Minimize the type and volume of material used onsite that will be regulated as hazardous waste when the material becomes spent or unfit for further use.
 - 3. Ensure that any hazardous material or hazardous substance for which the use, storage, or disposal is regulated under federal, state, or local requirements is handled and managed in accordance with the requirements applicable to those substances.

4. The use of degreasing or cleaning products containing chlorinated solvents such as 1,1,1-trichloroethane, perchloroethylene, trichloroethylene, and methylene chloride is prohibited unless approved by the Port.
5. Immediately clean up hazardous material spilled outside any designated secondary containment system in accordance with Oregon DEQ, U.S. EPA, or Oregon OSHA requirements. Clean up, as soon as possible, any hazardous materials spilled inside a secondary containment system.
6. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response plan including a map indicating storage site locations.
7. Ensure that every hazardous material container is clearly labeled with its contents or original product label. Indicate the Subcontractor's name and contact number on the side of every container greater than 5 gallons in size with legible size lettering. If hazardous material is transferred into a secondary container (i.e., any container used to transfer material from a storage location to a point of use or storage prior to use, including but not limited to buckets, pails, pans, drums, bottles, cans, etc.), this container shall also be labeled with the contents, the Subcontractor's name, and contract number.
8. Storage of flammable or reactive hazardous material/waste on Port property or within 50 feet of the Port property line is not permitted unless stored inside a building or other portable device approved by the Fire Marshal.
9. Keep an up-to-date file or notebook of Material Safety Data Sheets (MSDS) for all hazardous materials located by the Subcontractor on Port property. Upon request, this information shall be made available to the Port and Apex.
10. All containers used for storing, dispensing, or accumulating hazardous materials shall be placed inside a structure or under cover whenever possible. All containers not inside a structure shall be equipped with secondary containment.
11. Do not locate fuel and hazardous substances storage and dispensing areas where runoff flows from nearby roof drains.

B. Onsite Storage of Petroleum Products

1. Do not install or use underground storage tanks (USTs) on Port property.
2. Storage racks and vehicles shall be equipped with drip collection devices and enclosures.
3. Provide an emergency dispenser shut-off switch. Switch shall be located at least 15 feet from tanks or the minimum distance approved by the Fire Marshal, whichever is greater.
4. Use bollards or other vehicle restraint devices (e.g., Jersey barriers) to prevent vehicles from damaging tanks and containment area.
5. Tanks, containment areas, and dispensing pads shall be under cover or under a temporary shelter to minimize contact with, or accumulation of, precipitation, unless otherwise approved by the Port.

C. Large Containers (20 Gallons or More):

1. Store containers of hazardous liquids on an impervious surface (i.e., concrete, asphalt, or field-erected system [heavy plastic ground sheeting] capable of withstanding normal wear and tear from construction equipment and other traffic throughout the course of the work) and inside or under cover in a location that does not have any storm drain inlets or floor drains within 50 feet of the storage location.
2. For containers of liquids that are not, or cannot, be stored inside a structure, equip the storage area with some form of secondary containment. Acceptable secondary containment devices may include, but are not limited to:

- a. Field constructed secondary containment area such as a perimeter berm with impervious interior surface; or
 - b. Movable pallet systems with integrated secondary containment and covers (these systems are available in one, two, and four drum capacities).
- 3. Secondary containment systems shall have sufficient capacity to contain 10 percent of the total volume of hazardous material containers stored, or 110 percent of the volume of the largest container, whichever volume is greater.
- 4. Dispense from liquid-filled containers using a manually operated pump. Do not dispense from gravity feed spigots. Containers shall be used in an upright vertical position.
- D. Small Containers (Less Than 20 Gallons):
 - 1. Store containers of flammable liquids in National Fire Protection Association (NFPA) Code 30 approved safety cabinets, or equal.
 - 2. Store containers of non-flammable liquids in cabinets or other devices equipped with secondary containment.
- E. Empty Containers:
 - 1. A container is deemed empty when all possible material has been removed using normal practices (e.g. pouring, pumping, aspirating, etc.) and no more than 1 inch of residue remains on the bottom of the container or inner liner.
 - 2. Transferring of the liquid heel at the bottom of containers into other containers shall be done only in areas equipped with secondary containment.
 - 3. Do not store empty containers upside down, although they may be stored in a horizontal position if the bungs/lids are securely fastened.
 - 4. Do not rinse empty containers on the work site.
 - 5. Manage empty or unwanted containers as solid waste in accordance with the requirements of this section.
 - 6. Do not offer empty containers to employees or the public on Port property.

1.7 HAZARDOUS WASTE MANAGEMENT

- A. General:
 - 1. Obtain the necessary generator identification numbers from the Oregon Department of Environmental Quality (DEQ). Perform required characterization tests to determine if waste material produced is regulated as hazardous waste. Manage, transport, and dispose or recycle such waste in accordance with state and federal regulations.
 - 2. In addition to that required by federal or state regulations, the storage of containers containing hazardous waste shall be in accordance with the requirements described elsewhere in this section.
 - 3. Disposal of hazardous waste down any floor drain, sink, storm drain inlet, onto the ground, or into any water conveyance is strictly prohibited by state and federal law.
 - 4. Submit a monthly written report to the Port that provides:
 - a. A complete inventory of all hazardous waste generated that month;
 - b. The current inventory of Subcontractor-generated hazardous waste stored on Port property; and
 - c. The date(s) the waste was placed into onsite storage.

5. Keep all required hazardous waste documentation, including, but not limited to, testing records, inspection logs, manifests, and contingency plans onsite during the course of the work. Upon request, the Subcontractor shall make this information available to the Port and Apex.
6. Loading and transportation of hazardous waste from Port property shall be in accordance with the requirements described elsewhere in this section.

1.8 VIOLATION OF STORM WATER SYSTEM REQUIREMENTS

- A. The Subcontractor is responsible for reviewing Port Ordinance 361, Storm Water Regulation, available at www.portofportland.com or from the Port upon request, and the Port's Storm Water System Enforcement Rules adopted in accordance with Ordinance 361 (also available upon request). Violation of Ordinance 361 and the Storm Water System Enforcement Rules will be considered acts or omissions for purposes of the Subcontractor's indemnification obligation, and will represent a material breach of the Contract for which Apex and the Port may exercise all remedies available at law or under this Contract, including but not limited to the enforcement mechanisms and penalties provided for under such ordinance and rules. Such enforcement mechanisms and penalties may include, but not be limited to:
 1. Suspension or revocation of a permit or other authorization to engage in a particular activity on Port property; and
 2. Issuance of a citation punishable by a fine as authorized under ORS 777.990(2) and 778.990.

1.9 WASHDOWNS

- A. The washdown or hosing of hazardous material storage areas, refueling areas, or tank farm and containment areas is prohibited unless the Subcontractor provides for the collection and disposal of the washdown liquids.
- B. Limit washdown of vehicle and equipment service pads and other work areas. Limit steam cleaning and high pressure or other types of washing of vehicles and equipment. Liquids from these activities shall be collected, managed as contaminated wastewater, and properly disposed.

1.10 EQUIPMENT FUELING AND MAINTENANCE

- A. Ultra Low Sulfur Diesel (ULSD) Fuel:
 1. All diesel-powered off-road vehicles and equipment used on the project site for three consecutive days or more shall be fueled with ultra low sulfur diesel. This includes vehicles with engine horsepower ratings of 50 HP and above, and internal combustion engines used to power generators, compressors, and similar equipment.
 2. The ULSD fuel shall contain no more than 15 parts per million sulfur.
 3. If sufficient quantities of ULSD are not available, or if the price of ULSD is at least 3 percent greater than diesel fuel with a sulfur content in excess of 15 parts per million, Apex may allow the use of higher sulfur fuel. Such exceptions will be made on a case-by-case basis.

B. Fueling Operations:

1. Do not top off vehicle tanks when fueling on Port property.
2. Where practicable, fuel and liquid product dispensing shall be done over an impervious surface such as a concrete pad or field-constructed temporary pad (e.g. an aggregate pad with membrane bottom and side liner), at least 50 feet from the nearest storm drain inlet, drainage ditch, surface water, wetland, or other drainage conveyance. Install temporary impervious covers over storm drain inlets. Provide storm drainage diversion away from drainage ditches, surface water, wetlands, or other drainage conveyances.

C. Equipment and Vehicle Maintenance Operations:

1. Comply with requirements specified elsewhere in this section regarding onsite storage and use of hazardous material and management of hazardous or solid waste produced during the course of the work.
2. Perform daily equipment checks for leaking oil and fluids. Visible spills shall be immediately cleaned up.
3. Equipment with leaking oil or fluids shall be repaired prior to being operated on Port property.
4. To the extent practicable, park vehicles and equipment indoors, under a roof, or on an impervious surface to prevent stormwater contact in the area.
5. If a vehicle or equipment is known to be leaking oil or other fluids, and service cannot be completed that day, install a drip pan or absorbent materials to contain the leak until service and repair is completed.

D. Equipment Maintenance Areas:

1. To the extent practicable, vehicle and equipment servicing shall be done indoors or under cover.
2. Perform vehicle and equipment maintenance over an impervious floor or pad (concrete, chemical-resistant coated asphalt, or other field-erected system). Ensure that contaminated liquids including, but not limited to, contaminated stormwater are not discharged to any storm drain inlet, drainage ditch, swale, or other surface water conveyance.
3. For equipment that cannot practicably be moved to an equipment service area, take all reasonable precautions to prevent chemical spills onto the ground or into water. Use protective ground sheeting or absorbent materials beneath and around equipment areas that may be vulnerable to chemical spills.
4. Contaminated stormwater from vehicle and equipment maintenance areas shall not be allowed to discharge into the stormwater collection system, discharge onto the ground, or run overland to any drainage ditch or swale.
5. Solvent or caustic parts washing stations shall not be used outdoors, unless the area is covered and equipped with appropriate secondary containment as described elsewhere in this section.

E. Mobile Equipment Service Vehicles (Including Oilers):

1. Multi-purpose mobile equipment maintenance vehicles (oilers) that are equipped with multiple tanks or containers of lubricants, fuels, hydraulic fluids, greases, chemicals, etc., may be used on Port property under the following conditions:
 - a. The vehicle is equipped with a spill kit.

- b. The vehicle is equipped with a sufficient supply of containers for the collection of fluids that may be removed from the equipment being serviced (e.g., used oil, waste antifreeze, chemicals, etc.).
 - 2. If equipment service is performed within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland, the Subcontractor shall install a flexible storm drain cover over the storm drain inlet or place oil absorbent booms or socks around the inlet or other drainage conveyance prior to commencing work.
 - 3. Mobile tanker, mobile fueling, or equipment service personnel shall be appropriately trained in spill response techniques. At least one spill response-trained person shall be present at all times where fueling, fuel staging, or fuel transfers are made.
 - 4. Mobile motor fueling equipment shall be equipped with an emergency dispenser shutoff switch located in the cab or on the opposite side of the vehicle or trailer from the pump(s).
 - 5. Overnight/weekend parking of mobile equipment service vehicles shall not occur within 50 feet of the nearest storm drain inlet, drainage ditch, surface water, or wetland area unless the storm drain inlet, ditch, and all drainage conveyances leading to the surface water or wetland have been equipped with oil absorbent booms or pads.
- F. Storage and Handling of Waste Oil, Fluids, and Filters:
- 1. The Subcontractor shall determine whether or not waste oil, fluids, filters, and other materials generated from onsite maintenance activities are regulated as hazardous waste under state and federal regulations.
 - 2. Regardless of the regulatory status of waste oil, fluids, filters, and other material, if the waste material is accumulated and stored on Port property, the Subcontractor shall provide proper storage.

END OF SECTION 015719

SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 INSPECTION OF WORK AREA

- A. Examine the work area and become satisfied as to the conditions of the work involved and the quantities of materials required for the performance of the work.

1.2 LAYOUT OF WORK

- A. Survey and layout work performed under this contract shall be performed under the direct supervision of a professional land surveyor licensed in the State of Oregon.
- B. Conduct pre- and post-construction elevation surveys to verify depth excavated. Elevations shall be surveyed on a regular grid at spacings not greater than 50 feet.
- C. Survey Tolerances:
 - 1. Horizontal locations to the nearest 0.1 foot.
 - 2. Elevations to the nearest 0.01 foot.
- D. The Port will provide survey control points for the layout of alignment and grades shown on the drawings. The SubSubcontractor shall lay out the work from the survey control points and be responsible for all measurements in connection therewith.
- E. Furnish stakes, templates, platforms, equipment, and labor as required to lay out every part of the work from the established survey control points.
- F. Maintain and preserve stakes and monuments established by the Port until authorized to remove them. If such marks are destroyed by the Subcontractor prior to authorized removal, they may be replaced by the Port at its discretion. The expense of replacement will be deducted from any amounts due, or to become due, the Subcontractor.
- G. Measuring for pay quantities will be by Apex, except that neat line excavation volumes will be determined from layout work performed by Subcontractor' surveyor, including surveying of corners of additional excavation areas.
- H. Submit a copy of field notes made in connection with layout measurements to Apex if they are requested. Apex may check field layout measurements at any time.
- I. Engage a professional land surveyor licensed in the State of Oregon to replace monuments that are disturbed, damaged, or destroyed during the course of the work, and ensure that a record of survey depicting replaced monuments is filed at the appropriate county survey office, all at no additional cost to Apex.

1.3 VERIFICATION OF MEASUREMENTS

- A. Verify elevations and measurements and be responsible that executed dimensions fit actual conditions, regardless of the drawings, and report discrepancies to Apex before proceeding with the work. The Subcontractor will not receive extra compensation for verification of measurements or for labor or material expended on account of such differences.

1.4 EXISTING UTILITIES

- A. Notify the Oregon Utility Notification Center (OUNC), and owners of underground utilities within the construction area or within affected public rights-of-way or easements, via the “one-call” notification system (1-800-332-2344) in advance of the commencement of excavation activities, as prescribed in Oregon Revised Statutes (ORS) 757.541 to 757.571, Excavation Regulations.
- B. Notify Apex when the “one-call” request is being initiated.
- C. Protect existing utilities, and other public and private facilities and improvements which are to remain in place, from damage in the course of the work.
- D. Perform any shutdown of utilities only when such shutdown will not interfere with Port or tenant operations. Schedule shutdowns through Apex, allowing time for adequate coordination.
- E. In the event of interruption to field-located utility services as a result of the work, promptly notify Apex first, and then the proper authority. Cooperate with said authority in restoring service as promptly as possible. If required, the Subcontractor shall install suitable temporary service until permanent repair is completed and bear the cost of repair and temporary service.
- F. Unless noted as abandoned, expose utilities only by hand excavation.
- G. Notify Apex of all utilities exposed. Do not disrupt or cut utilities until identified and the Port has approved the cut.
- H. Repair damages that result from execution of the work at no cost to Apex. Repairs shall be subject to approval of the Port.

END OF SECTION 017000

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 AS-CONSTRUCTED DRAWINGS

- A. Upon completion of the work, and as a requirement of final acceptance, submit to Apex a drawing set showing all as-constructed changes and information.

1.2 CONSTRUCTION STAKE AND MARKINGS REMOVAL

- A. Remove stakes and painted markings used in construction layout.

1.3 CLEANUP

- A. Remove debris from the staging and work area(s).
- B. Thoroughly sweep paved areas prior to final acceptance.

1.4 CERTIFICATES OF FINAL APPROVAL

- A. Submit originals or clearly readable copies of certificates of approval from the inspection authority prior to application for final payment.

END OF SECTION 017700

SECTION 026100 – REMOVAL AND DISPOSAL OF CONTAMINATED SOILS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section describes excavation and disposal of soil contaminated with arsenic.
- B. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex. Apex will characterize contaminated soil, obtain profile for disposal, and determine the location of disposal.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 312000, Site Clearing and Earthwork

1.3 SUBMITTALS

- A. Submit copies of all receipts for processing contaminated soil at the disposal facility.

1.4 DISPOSAL DOCUMENTATION

- A. Apex will prepare documentation required for characterization and disposal of contaminated soil at the disposal facility.

1.5 DEFINITIONS

- A. Contaminated Soil: Soil that produces a fuel or chemical odor, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated.

PART 2 - PRODUCTS

2.1 PLASTIC SHEETING

- A. Minimum 6 mil polyethylene sheeting.

PART 3 - EXECUTION

3.1 GENERAL

- A. Apex will provide field and laboratory evaluation of materials suspected of being contaminated.
- B. Notify Apex 48 hours before excavating in an area of known or suspected contamination.
- C. Apex will designate which materials are contaminated and which are suitable for use in the work.
- D. The Port, through Apex, will determine the disposition of all materials.
- E. The Subcontractor shall assist Apex in collecting soil samples from excavator buckets or by briefly stopping work to allow observations or samples to be collected.

3.2 EXCAVATION AND STOCKPILING

- A. All contaminated excavated material is the property of the Port and will be handled per direction by the Port and Apex.
- B. Excavation to remove material determined by Apex to be contaminated shall be performed as described in Section 312000, Site Clearing and Earthwork, and shall be made to the depth and extent as determined by Apex.
- C. Provide adequate containment of and protection from contaminated material, suited to the type of contamination. Follow all federal, state, and local requirements in excavating, loading, transporting, and otherwise handling or working around contaminated material. The Subcontractor shall be responsible for meeting all regulatory requirements.
- D. Contaminated stockpiles shall meet the requirements of Section 312000, Site Clearing and Earthwork.
- E. Place contaminated soil in a stockpile separate from clean materials.

3.3 DISPOSAL

- A. Apex will characterize contaminated soil and obtain the profile for disposal.
- B. Contaminated soil shall be disposed of by the Subcontractor at a location approved by the Port. Follow all federal, state, and local requirements and regulations in excavating, loading, transporting, disposing of, and otherwise handling the contaminated soil.

END OF SECTION 026100

SECTION 312000 – SITE CLEARING AND EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section describes site clearing, excavation, stockpiling, filling, grading, and subgrade preparation.
- B. If the Subcontractor encounters suspected contaminated soil in the work area beyond that mentioned in the contract documents, the Subcontractor shall immediately stop all work in the area of the suspected contamination and notify Apex. Contaminated soil is soil that produces fuel or chemical odors, produces an oil sheen on the surface of water, has staining, contains debris or other visible indicators, or soil designated by Apex as contaminated. Apex will characterize contaminated soil and obtain profile for disposal. The Port will determine the location of disposal.

1.2 REFERENCES

- A. AASHTO: American Association of State Highway and Transportation Officials
 - 1. AASHTO T180: Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
- B. ASTM: American Society for Testing and Materials
 - 1. ASTM D2922: Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- C. ODOT: Oregon Department of Transportation – 2008 Standard Specifications

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 015713, Temporary Erosion, Sediment, and Pollution Control
- B. Section 026100, Removal and Disposal of Contaminated Soils

PART 2 - PRODUCTS

2.1 SUITABLE MATERIAL

- A. Imported Backfill:
 - 1. Crushed Aggregate: ODOT Section 02630, 1"-0" or 3/4"-0".

PART 3 - EXECUTION

3.1 GENERAL

- A. Apex will designate the disposition and determine the suitability of products.
- B. The right is reserved to make minor adjustments or revisions in line or grades, if found necessary as the work progresses.
- C. No excavation or stripping shall be started until the Subcontractor has staked out the proposed work.
- D. Suspend earthwork when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions.
- E. Drag, blade, or slope the grade to provide proper surface drainage. Install temporary drains and drainage ditches to intercept or divert surface water which may affect the prosecution or condition of the work.
- F. Excavate and place embankment to such depth that sufficient material will be left above the designated grade to allow for compaction to the proper grade. Replace material excavated below the designated lines with approved materials, in an approved manner and condition, at no added cost.
- G. Route hauling equipment around or away from areas of soft or yielding subgrade.
- H. Furnish and maintain earth-moving equipment in satisfactory condition and operate such equipment as necessary to control uniform density, section, and smoothness of grade.
- I. Promptly remove soil or other foreign materials that fall on pavements.
- J. In-place density and moisture content will be determined by ASTM D2922. Engage the services of a testing laboratory acceptable to Apex to conduct the required testing. In-place density shall be determined at a frequency of not less than each 1 foot of vertical fill and each 5,000 square feet of fill area.

3.2 CLEARING AND GRUBBING

- A. Remove clearing materials to within three inches of the ground surface.
- B. Grubbing is not required.
- C. Dispose of clearing materials off Port property.
- D. Limit the total cleared areas, and other disturbance, to only those areas necessary for the orderly flow of work.

3.3 EXCAVATION

- A. Excavate to the depth, lines, and grades shown on the drawings or as otherwise specified.

3.4 STOCKPILING

A. Method A

1. Use for stockpiles of soil with arsenic above 8.8 mg/kg that are being used on a daily basis.
2. Allowed only within the area of excavation where confirmation sampling has not been conducted or in the soil processing area.
3. No liner or cover is required.
4. Use erosion and dust control best management practices as needed to maintain stockpiles in a manner that prevents dust generation, run-on, runoff, or erosion of the stockpiles.
5. Stockpiles of soil waiting processing will be maintained in a manner that protects the soil from rainfall.

B. Method B

1. Use for soil waiting to be used for backfill.
2. Allowed only within the work limits, outside of potential excavation areas.
3. No liner or cover is required.
4. Use erosion and dust control best management practices as needed to maintain stockpiles in a manner that prevents dust generation, run-on, runoff, or erosion of the stockpiles.

C. Method C

1. Use for any other stockpiles.
2. Stockpile on pavement or on plastic sheeting.
3. The perimeter of the plastic sheeting shall be elevated to prevent overland stormwater flow from contacting the contaminated soil. Pavement may substitute for the plastic sheeting if there is a method for preventing stormwater flow into the stockpile (e.g., a curb on the uphill side of the stockpile).
4. Cover contaminated soil stockpile with plastic sheeting when the stockpile is not actively involved in construction. Secure the plastic covering to ensure it stays in place and that stormwater runoff from the cover does not pond on the cover or contact the soil.

3.5 SOIL PROCESSING

- A. Soil processing shall consist of mechanical separation of gravel (coarse fraction) from finer soil (fines fraction) using vibratory or rotary drum screens specifically manufactured for this purpose. The equipment shall be operated in the manner and at the throughput rate recommended by the manufacturer.
- B. Coarse fraction and fines fraction shall be separated using a No. 4 sieve.
- C. Soil shall be processed until the coarse fraction contains less than 2 percent by weight of material passing the No. 10 sieve.

- D. Soil processing operations shall be conducted such that there is no visible dust outside of the soil processing area.
- E. Apex will collect samples for grain size testing to verify the processed soil meets the above requirements. Subcontractor shall allow 48 hours from completion of processing until notification of grain size test results. Coarse fraction soil will either be designated as suitable for use as backfill or will be required to be re-processed, as directed by Apex.

3.6 FILL

- A. Construct fill to the lines and grade shown on the drawings.
- B. Construct fill from Imported Backfill.
- C. Construct in lifts of not more than 12 inches in loose depth. The full width of the cross section shall be brought up uniformly.
- D. Material shall be placed in layers and shall be near optimum moisture content before rolling to obtain the prescribed compaction. Wetting or drying of the material and manipulation to secure a uniform moisture content throughout the layer may be required. Such an operation shall be incidental to the appropriate bid item. Should the material be too wet to permit proper compaction by rolling, delay work on portions of the fill thus affected until the material has dried to an acceptable moisture content.
- E. Do not place frozen material in the fill, or place fill material on frozen material.
- F. Be responsible for the stability of the fill and replace any portion which has become displaced due to the Subcontractor's improper operations.
- G. Route equipment, both loaded and empty, over the full width of embankment to ensure uniform distribution and density of material placement.
- H. Compact each lift as follows:
 - 1. Fill shall be compacted to a minimum of 95 percent of AASHTO T-180.
- I. In-place density and moisture content will be determined by ASTM D2922. Subcontractor shall engage the services of a testing laboratory acceptable to Apex to conduct the required testing. In-place density shall be determined at a frequency of not less than each 1 foot of vertical fill and each 5,000 square feet of fill area.

3.7 SITE GRADING

- A. Using Imported Backfill materials, shape, trim, finish, and compact surface areas to conform to the lines, grades, and cross-sections shown on the drawings or as designated by the Port.
- B. Grade surfaces to drain.
- C. Eliminate wheel ruts by regrading.

- D. Compact per the Fill Section.
- E. The finished surface of site grading areas shall not be more than 0.05 foot from specified grade.

3.8 SUBGRADE PREPARATION

- A. Shape top of subgrade to the lines and grades shown on the drawings.
- B. Maintain top of subgrade in a free-draining condition.
- C. Stockpiling materials on top of subgrade will not be permitted unless approved.
- D. Vehicles will not be allowed to travel in a single track. If ruts are formed, reshape and reroll.
- E. No compaction of subgrade is required.
- F. The finished top of subgrade shall not vary by more than 0.05 foot from established grade and cross-section.

END OF SECTION 312000